Измерители яркости LS-150/LS-160
Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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Luminance Meters LS-150 / LS-160

A next generation handheld digital luminance meter for measurement of light sources and reflected light. Building on the key design features of their predecessors with new features, improved accuracy and increased measurement range.

Introduction

Portable Precision Luminance Meter
The LS-150 and LS-160 are lightweight, compact and battery powered luminance meters for the measurement of a wide range of luminance conditions. A worthy successor to the LS-100 and LS-110, the new instruments offer improved features and usability. These next generation instruments provide an increased measurement range and improved V(λ) correlation (CIE relative photopic luminosity curve).

To provide the most accurate measurement of luminance, the relative spectral response of the measuring instrument should perfectly match the sensitivity of the human eye for photopic vision, as represented by the CIE spectral luminous efficiency V(λ). Alongside improved usability, the LS-150/160 feature an improved correlation to V(λ) and a greatly improved measurement range upto 999,900 cd/m2 (LS-150) and 9,999,000 cd/m2 (LS-160).

The LS-150 and 160 feature the same user friendly features as the popular LS-100 and LS-110:

- SLR (single lens reflex) optical system and pistol grip design gives the operator precise control over targeting and ensures that the viewfinder shows the exact area to be measured, even at very short distances.
- The measured luminance value is displayed both inside the viewfinder and on the large external monochrome display.
- The optical system is virtually flare-free, eliminating the influence of light from outside the measurement area.
- Areas as small as 0.4mm diameter (LS-160) can be measured when using the optional close-up lenses (for information on measurement areas please check the table within the instrument specifications).
- The result is a truly next generation measuring instrument, both accurate and user friendly. The LS-150 also satisfies the criteria for DIN 5032-7 Class B.

Principal Applications

- Measurement of the luminance of CRTs, LED's, and EL's.
- Measurement of road and tunnel brightness
- Measurement of rail-system signals
- Measurement of road and airport signals
- Measurement of illumination and outdoor signs
- Measurement of illumination equipment and devices
- Research and measurement testing
- Measurement of device brightness

Features

Main Features

- **Lightweight and portable**
  Light weight, compact and battery powered, the LS-150/160 weighs just 850 g (not including batteries). These ergonomic and portable instruments include a hard case as standard meaning they are easy to transport and operate for prolonged periods.
- **SLR (single-lens-reflex) optical system**
  The LS-150/160 single-lens-reflex design ensures that there is no difference between area indicated in the viewfinder and the actual measurement area. The easy to use SLR optical system has been designed to be practically flare free which eliminates the effect of illumination outside the measurement area, ensuring accuracy.
- **Spot measurement for small target areas**
  The 1° acceptance angle of the LS-150 can measure areas with a diameter as small as 14.4 mm (at a distance of 1,014 mm); using the optional close-up lens, this can be reduced down to measurement diameters as small as 1.3 mm (at a distance of 205 mm).
  The 1/3° acceptance angle of the LS-160 can measure areas with a diameter as small as 0.4 mm (with close-up lens 110 attached).
- **Large monochrome LCD Display with backlight**
  Measurement data is shown both inside the viewfinder and on the external display, supporting different modes of user operation.
- **Data memory for 1000 measurements**
- **USB 2.0 communication**
  Connect with a PC via USB 2.0 to send measurement data and receive control signals. The instrument can also be powered by USB cable, ideal for use in measuring rigs or when working with a PC/tablet computer. Data-management software CS-S20w is included as a standard accessory.
- **10 Calibration channels available for calibration to a user reference lightsource**
  The LS-150/160 can be calibrated to a user reference light source; this can be used to further reduce errors when using multiple devices.
- **Luminance, luminance difference, ratio, peak and valley measurement**
  Based on the particular application, measurement values can be set to instantaneous luminance, peak/valley luminance and luminance ratio.

Besides the measurement of absolute values, the instrument can also display values relative to a defined

standard (target). That way differences in brightness of large surfaces or similar items can be quickly ascertained.

Areas of application
Practically anything that illuminates or reflects light can be measured with Konica Minolta's portable luminance meters. For example: signal lights, traffic lights, road surfaces, tunnel walls, airport lighting, lamps, LED's, picture tubes, etc.

Users could use the LS-150/160 to guarantee minimum brightness, exchange lamps that are fading before any quality or safety issues occur, or build quality assurance into the production of lamps. You can also check indirectly illuminated objects including projection screens, effect and display lighting. The size and portability of this instrument allows you to operate in any location where a measurement is needed.

Specifications

Principal Specifications LS-150/LS-160

Model	Luminance Meter LS-150	Luminance Meter LS-160
Type	SLR spot luminance meter for measuring light-source and surface brightness	
Acceptance angle	1°	1/3°
Optical system	85mm f/2.8 lens; SLR viewing system	
Angle of view	9°	
Relative Spectral Response	Closely matches the CIE spectral luminous efficiency V (λ)	
Standard	Din 5032 Part 7 Class-B	
Receptor	Silicon photocell	
Minimum measuring area	Ø 14.4 mm (1.3mm)	Ø 4.5 mm (0.4mm)
Minimum measuring distance	1012mm (213mm)	
Measurement modes	Luminance; difference luminance; peak/valley luminance or luminance ratio	
Response time	Auto: 0.7 to 4.3s. Manual: 0.7 to 7.1s.	
Luminance units	cd/m^2 or fL (switchable in menu)	
Measuring range	0.001 - 999,900 cd/m^2	0.01 - 9,999,000 cd/m^2
Accuracy	Lv ±2%+2digit (below 1cd/m^2) Lv ±2%+1digit (above 1cd/m^2)	Lv ±2%+2digit (below 10cd/m^2) Lv ±2%+1digit (above 10cd/m^2)

Model	Luminance Meter LS-150	Luminance Meter LS-160
	(Illuminant A measured at ambient temperature of 20 to 30°C/68 to 86°F)	
Repeatability	Lv ±0.2%+1digit	Lv ±0.2%+1digit
	(Measurement subject: Illuminant A)	
Temperature / humidity drift	0 to 40°C, RH85% or less (at 35°C)with no condensation	
Flare characteristic	1% or less	
Polarization error	1% or less	
Temperature dependence	0.2%/K or less	
Calibration mode	Konica Minolta standard/user-selected standard (switchable)	
Colour correction factor	Set by numerical input; range: 0.001 to 9.999	
Reference luminance	10 ch; set by measurement or numerical input	
Data memory	1000 Data	
Display	External: Large multi digit LCD with backlight (with dimmer function) and additional indications	
	Viewfinder: 4 -digit LCD with LED backlight	
Data communication	USB 2.0	
Sync measurement	20 Hz to 400 Hz	
Power source	Two AA size (1.5V) batteries, AC adapter (optional accessories) USB power bus	
Operating temperature / humidity range	0 to 40°C, RH 85% or less (at 35°C) with no condensation	
Storage temperature / humidity range	0 to 45^0C, RH85% or less (at 35^0C) with no condensation	
Dimensions	71×214×154mm	
Weight	850 g without battery	
Standard accessories	Lens cap; Eyepiece cap; 2 AA-size batteries, Wrist wrap; Case, USB cable, Data management software CS-S20	

Specifications are subject to change without notice.

Accessories

Optional Accessories for LS-150/LS-160

Close-up lenses

Close-Up Lenses	CS-150	CS-160	Item Order Code
No. 153	Ø 8.0 mm	Ø 2.7 mm	1804-740
No. 135	Ø 5.2 mm	Ø 1.8 mm	1804-741
No. 122	Ø 5.2 mm	Ø 1.1 mm	1804-742
No. 110	Ø 1.3 mm	Ø 0.4 mm	1804-743

White calibration plate (for 45-0)

Item Order Code: 1852-711

CCD Camera Adapter

Item Order Code: A8A8-710

Illuminance Adapter

Item Order Code: A8A8-711

AC-Adapter AC-A305M

Item Order Code: A80F-713

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